

Vu, Anthony T.

S/N: 09/682,366

REMARKS

Claims 1-27 are pending in the present application. In the Office Action mailed June 4, 2004, the Examiner rejected claims 2 and 11-24 under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The Examiner next rejected claims 11-24 under 35 U.S.C. §112, second paragraph, as being indefinite. Claims 1-27 were rejected under 35 U.S.C. §102(e) as being anticipated by Fain et al. (USP 6,459,264).

Drawings

The Examiner objected to the drawings "because figure 4 contains blacked-out text." To rectify the objected-to blacked-out text contained in Fig. 4 and to formalize the figures as a whole, Applicant has included herein substitute drawings labeled Figs. 1-4. Please substitute Figs. 1-4 included herein for the drawings previously of record.

Claim Rejections Under §112

The Examiner rejected claims 2 and 11-24 under §112, first paragraph, as failing to comply with the enablement requirement. With respect to claim 2, the Examiner objected to the claim because of the use of the term "on-the-fly." However, contrary to the Examiner's position, the Brief Description of the Invention Section of the Specification clearly states that "[t]he MRI apparatus also includes a computer programmed to modify a pulse sequence upon demand." ¶ 9. As such, Applicant has clearly enabled one of ordinary skill in the art to utilize a computer to modify a pulse sequence "upon demand," Applicant believes the term "on-the-fly" is also sufficiently enabled. Specifically, Applicant believes one of ordinary skill in the art will recognize the similarities between the terms "upon demand" and "on-the-fly." Accordingly, Applicant believes claim 2 to be fully compliance with the enablement requirement of §112, first paragraph.

The Examiner also rejected claim 11 because "the specification does not disclose software for modifying the pulse sequence upon demand." (Emphasis added). However, Fig. 4 and the accompanying description clearly discloses the technique for modifying pulse sequence on demand, and paragraphs 18 and 35 of the Specification discloses that the MRI system includes a computer system that is linked to a storage medium for storing of image data and programs. Therefore, Applicant believes one of ordinary skill in the art is enabled to make and/or use the claimed invention. Applicant believes the description is sufficient to enable one of ordinary skill in the art to construct the necessary "software" for modifying the pulse sequence upon demand.

Vu, Anthony T.

S/N: 09/682,366

Additionally, Applicant believes that the creation of software for modifying pulse sequences is well known in the art and that one of ordinary skill, after a review of the present application, would be sufficiently enabled to create the requisite software. Accordingly, Applicant believes claim 11 to be in full compliance with the enablement requirement of §112, first paragraph.

The Examiner also rejected claim 18 under §112, first paragraph because "the specification does not disclose a computer program or software for carrying out the recited functions." As previously addressed with respect to claim 11, the present application disclosed an MRI scanner having one or more computer-based controls to execute an MR data acquisition protocol, such as that claimed, and it is believed that this disclosure sufficiently enables one of ordinary skill in the art to generate a computer program or software required for carrying out the recited functions of claim 18. As such, Applicant believes claim 18 is in compliance with 35 U.S.C. §112, first paragraph.

The Examiner then rejected claims 11-24 under §112, second paragraph, as being indefinite. Specifically, with respect to claim 11 the Examiner took exception to the use of the term "a computer programmed to" as being vague and indefinite. It appears the Examiner concluded such because the Examiner was unable to "clearly ascertain" which element(s) of the figures correspond to the "a computer programmed to." Specifically, the Examiner questioned whether the programmed computer corresponds to "computer system 20, system control 32, CPU 36, a combination thereof, etc.?"

Applicant does not believe the Examiner's basis for finding the claim vague and indefinite to be supported under §112, second paragraph, because §112 does not include any requirement that each and every word or phrase within a claim directly correspond to only one particular element within a figure or some specific combination of elements within a figure. The second paragraph of §112 merely states that "[t]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which Applicant regards as his invention." Nowhere within the second paragraph of §112 is any requirement that Applicant make a direct correlation between a specific word, phrase, or element of the claim explicit or implicit. As such, Applicant does not believe claims 11-17 are vague or indefinite within the definition of §112, second paragraph.

Similarly, the Examiner's rejection of claim 18 for calling for a "computer readable storage medium" is unsupported. The Examiner found claim 18 vague and indefinite because the Examiner could not clearly ascertain what specific elements of the figures correspond to the "computer readable storage medium." Again, Applicant believes claim 18 to be neither vague

Vu, Anthony T.

S/N: 09/682,366

nor indefinite and believes one of ordinary skill in the art could readily comprehend that which is called for within claim 18. Moreover, an MRI scanner linked to storage devices for storage of data and programs is described in paragraph 18. Furthermore, Applicant finds no such requirement that every word or phrase within a claim directly correspond to some specific element or combination thereof as shown within the figures. Therefore, Applicant believes claims 18-24 are in full compliance with §112, second paragraph.

Examiner's Proposed Interpretation of the Claims

The Examiner provided an explanation of the Examiner's understanding of the present invention. The Examiner's explanation of this interpretation seemed to extend from the Examiner's desire to correlate portions of the claims with specific enumerated elements of the figures. However, the Examiner's articulated interpretation is not supported by the specification or the claims.

Specifically, the Examiner stated, "The examiner understands that the present invention effects selective, on demand modification of the pulse sequence from 3D mode to 2D mode, and vice versa, through operator console 12 which sends desired scan sequence commands from the operator to system control 32 and pulse generator 38." While the Examiner's statement expresses one possible interpretation that may be supported under both the specification and the claims, neither is so limited so as to be the sole interpretation that should be considered when applying the prior art. Specifically, such modification of pulse sequences may be communicated through any of a variety of systems disclosed within the specification. As such, an interpretation of the claims should not be so limited to only one particular system.

For example, it is equally supported by the specification that modifications to the pulse sequence may be triggered and/or communicated by the computer system, the system control 32, the CPU 36, and/or a combination of any of these systems. Simply, there is no basis to limit the claim interpretation as articulated by the Examiner. Rather, the Examiner must interpret the claims as broadly as possible in light of the specification. *See* MPEP §2111.01. To provide any examination limited to an interpretation less stringent than required under MPEP §2111.01, would be improper.

The Examiner further stated that the Examiner understands that the "modification of the pulse sequence from 3D to 2D merely involves disabling of gradients in one dimension." Applicant finds the Examiner's statement incorrect because it is unsupported by the specification, the express language of the claims, or knowledge of one skilled in the art. Specifically, as

Vu, Anthony T.

S/N: 09/682,366

expressly called for in claim 1, the present invention includes "applying a pulse sequence that is applicable in a 3D pulse sequence with slice encoding and rewinder gradients disabled in one dimension." (Emphasis added). Therefore, the present invention does not simply involve the disabling of abstract gradients in one dimension, as the Examiner's statement implies, but includes disabling specific gradients of a 3D pulse sequence, i.e. slice encode and rewinder, so as to acquire 2D MR data to localize the 3D imaging volume. Therefore, Applicant asserts that any interpretation and understanding of the invention must include these explicit elements of the claims.

The Examiner concluded the "Claim Interpretation" section of the Office Action by stating that "the examiner assumes that the computer 'programmed' to perform the above functions corresponds to system control 32 (comprising CPU 36) and the computer readable medium corresponds to elements 28 and/or 30." Again, as previously articulated with respect to the rejections under §112, second paragraph, Applicant does not believe the Examiner is required to seek express correlations between each and every word or phrase in the claims and an enumerated element of the figures. Once more, Applicant disagrees with the Examiner's interpretation and does not believe that the specification supports such a limiting interpretation of the claims. Applicant asserts that the "programmed computer" and "computer readable storage medium" may correspond to any of the elements or combination of elements identified by the Examiner and, for examination purposes, believes it is irrelevant to which, if any, of the specific elements identified by the Examiner either corresponds.

In summary, Applicant simply requests that the Examiner review the claims as a whole and interpret them as broadly as possible in light of the Specification. See MPEP §2111.01

Rejections Under §102(e)

The Examiner rejected claims 1-27 as anticipated by Fain et al. Applicant believes that the claims in the present invention define over Fain et al. However, Applicant conceived of the claimed invention prior to the effective filing date of the cited reference. Moreover, Applicant diligently worked with counsel in preparing and filing the present application. Therefore, Applicant has elected to disqualify the Fain et al. as available prior art. As such, Applicant refers the Examiner to the Declaration Under 37 CFR §1.131 enclosed herewith.

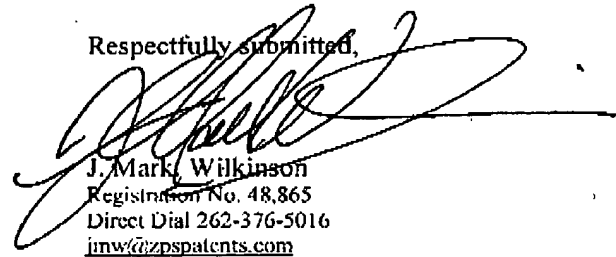
Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-27.

Vu, Anthony T.

S/N: 09/682,366

Applicant appreciates the Examiner's consideration of these Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,



J. Mark Wilkinson
Registration No. 48,865
Direct Dial 262-376-5016
jmw@zpspatents.com

Dated: September 2, 2004
Attorney Docket No.: GEMS8081.092

P.O. ADDRESS:
Ziolkowski Patent Solutions Group, LLC
14135 North Cedarburg Road
Mequon, WI 53097-1416
262-376-5170